

IN THE CLAIMS

1. (Presently Presented) A heat-resistant magnesium alloy for casting, the magnesium alloy being good in terms of the castability and heat resistance, and consisting essentially of:

calcium (Ca) in an amount of from 1 to 15% by mass;
aluminum (Al) in a summed amount of from 4 to 25% by mass with the amount of Ca;

manganese (Mn) in an amount of from 0.1 to 1% by mass;
the balance being magnesium (Mg) and inevitable impurities when the entirety is taken as 100% by mass and

a mass ratio of the Ca amount with respect to the Al amount, Ca/Al by mass, being 1 or more.

2. (Canceled)

3. (Previously Presented) The heat-resistant magnesium alloy set forth in claim 1, wherein the mass ratio of the Ca amount with respect to the Al amount, Ca/Al by mass, is 2 or more.

4. (Original) The heat-resistant magnesium alloy set forth in claim 1, wherein a solidification temperature width, a temperature difference between a liquidus temperature at which a molten metal starts solidifying and a solidus temperature at which the molten metal completes solidifying, is 110 °C or less.

5. (Canceled)

6. (Original) The heat-resistant magnesium alloy set forth in claim 1 whose average crystalline grain diameter indexing the structural roughness is 18 μm or less.

7. (Original) A heat-resistant magnesium alloy cast product being good in terms of the heat resistance, and produced by a process comprising the steps of:

pouring a molten alloy into a mold, the molten alloy comprising the heat-resistance aluminum alloy set forth in claim 1; and

solidifying the molten alloy by cooling it after the pouring step.

8. (Original) The heat-resistant magnesium alloy cast product set forth in claim 7 being free from a rare-earth element.

9. (Original) The heat-resistant magnesium alloy cast product set forth in claim 7 whose average crystalline grain diameter indexing the structural roughness is 18 μm or less.

10. (Previously Presented) A heat-resistant magnesium alloy for casting, the magnesium alloy being good in terms of the castability and heat resistance, and consisting essentially of:

calcium (Ca) in an amount of from 1 to 15% by mass;

aluminum (Al) in an amount of from 4 to 10% by mass; and

the balance being magnesium (Mg) and inevitable impurities when the entirety is taken as 100% by mass, and

a mass ratio of the Ca amount with respect to the Al amount, Ca/Al by mass, being 1 or more.

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11. (Previously Presented) The heat-resistant magnesium alloy set forth in claim 10 further comprising manganese (Mn) in an amount of from 0.1 to 1% by mass.

12. (Previously Presented) The heat-resistant magnesium alloy set forth in claim 10, wherein the mass ratio of the Ca amount with respect to the Al amount, Ca/Al by mass, is 2 or more.

13. (Previously Presented) The heat-resistant magnesium alloy set forth in claim 10, wherein a solidification temperature width, a temperature difference between a liquidus temperature at which a molten metal starts solidifying and a solidus temperature at which the molten metal completes solidifying, is 110°C or less.

14. (Previously Presented) The heat-resistant magnesium alloy set forth in claim 10 whose average crystalline grain diameter indexing the structural roughness is 18 μm or less.

15. (Previously Presented) A heat-resistant magnesium alloy cast product being good in terms of the heat resistance, and produced by a process comprising the steps of:

pouring a molten alloy into a mold, the molten alloy comprising the heat-resistance aluminum alloy set forth in claim 1; and

solidifying the molten alloy by cooling it after the pouring step.

16. (Previously Presented) The heat-resistant magnesium alloy cast product set forth in claim 15 being free from a rare-earth element.

17. (Previously Presented) The heat-resistant magnesium alloy cast product set forth in claim 15 whose average crystalline grain diameter indexing the structural roughness is 18 μm or less.